

Integrated Planning in Action

Integrated Plan for the Environment

Springfield, Missouri

Kayakers on the James River. Photo courtesy of Springfield Convention and Visitors Bureau.

Located in the heart of the Ozarks, Springfield is the third largest city in Missouri, with a population of more than 167,000. The city manages a separate sanitary system as well as a storm sewer system and operates two wastewater treatment facilities.¹ One of these discharges to the James River Watershed and the other discharges to the Sac River Watershed. Springfield's storm sewer system² discharges to tributaries of the James River. The James River is a popular recreation destination and features a 6-mile "water trail" for canoeing and kayaking that flows through Springfield and connects to the Trail of Honor—a riverside walking trail that winds through the Missouri Veterans Cemetery.

Challenges

During heavy storms, stormwater and groundwater enter Springfield's sanitary sewer system through cracks and improper connections (i.e., infiltration and inflow). This leads to sanitary sewer overflows (SSOs) and bypasses at the wastewater treatment facilities. In 2012, Springfield agreed to address SSOs and reduce bypasses under an amended consent judgment with the Missouri Department of Natural Resources (MDNR). This judgment required the city to spend \$50 million and complete Early Action Plan projects in the first seven years while it developed an overflow control plan.

Springfield must also comply with two wastewater treatment facility permits and a stormwater permit that implement total maximum daily loads for bacteria in the Little Sac River and nutrients in the James River. Some local rivers and streams are also impaired by polycyclic aromatic hydrocarbons in stormwater runoff from driveways and parking lots.

Integrated Planning in Action

The city, Greene County, and city utilities developed a "citizen-focused approach" to address water quality impairments and other community priorities using local knowledge to holistically examine the city's environmental resources. The city organized an Environmental Priorities Task Force of community members, city and county staff, and technical experts to address these challenges and identify other priorities important to the community. This group set goals and worked together to identify affordable solutions to wastewater and stormwater challenges, as well as to meet solid waste and air quality objectives, using four key elements (see box below). The task force



EPA Region 7

167,000 population



¹ "Wastewater treatment facilities" (WWTFs) is a generic term for facilities that treat or manage wastewater, including publicly owned treatment works.

² Storm sewers and storm sewer systems can also be referred to as municipal separate storm sewer systems (MS4s). Stormwater discharge permits can be referred to as MS4 permits.

identified and ranked sources of pollution based on the impact on the environment. They then identified possible strategies to address these sources and conducted a cost-benefit analysis to determine which strategies would provide the most social and environmental benefit per dollar spent. Using this process, Springfield determined that the most cost-effective strategies to pursue were stormwater detention basin retrofits, enhanced nutrient removal at one of the city's wastewater treatment facilities, programs to reduce polycyclic aromatic hydrocarbons in stormwater, and SSO controls to reduce infiltration and inflow of water into the sanitary sewer system. Springfield did not select specific projects during the planning process, but rather committed to pursue projects that align with the selected strategies.

Results

In 2015, Springfield released its *Integrated Plan for the Environment*. That same year the city completed an SSO control plan that—based on findings from the integrated planning process—identified and compared solutions to control SSOs. The approved overflow control plan included \$200 million in SSO improvements to be completed over 10 years (by 2025). MDNR approved Springfield's integrated plan and referenced it in the city's 2017 municipal stormwater permit and 2020 wastewater permits. These permits require that Springfield identify cost-effective solutions to address the most significant sources of pollution as proposed in the integrated plan. Since the stormwater permit was issued, Springfield has implemented a "Clean Pavement Initiative" that encourages businesses and residents to voluntarily choose sealants for parking lots and driveways that are lower in polycyclic aromatic hydrocarbons. Several businesses and citizens have committed to choose asphalt-based sealant and received signage showing their commitment. Springfield also implemented a pilot voluntary detention basin retrofit program, completing the first project in 2019.

Key Elements

- Prioritizing the most significant pollution sources
- Prioritizing cost-effective solutions
- Capturing community priorities
- Assessing financial capability

Approach for Ensuring a Sustainable Return on Investment, Using the Four Key Elements as Guidance

